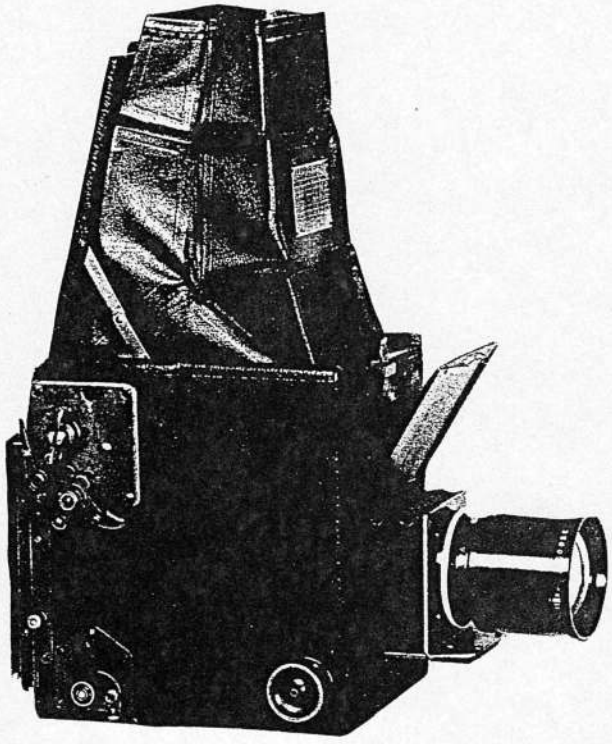
GRAFLEX

2-1/4 x 3-1/4 RB Series B
Service & Parts Manual



2 1/4 x 3 1/4 RB SERIES B GRAFLEX with REVOLVING BACK

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2¼ x 3¼ R. B. Series B GRAFLEX
Front Door, Top Door, Front Plate

Special Precautions for:

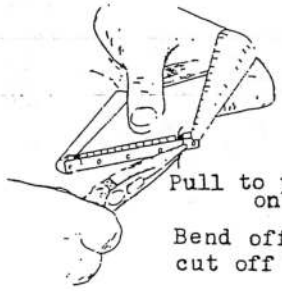
1. Front Door
   - a. Panel
   - b. Spring
   - c. Covering
2. Top Door
   - a. Replacement
   - b. Handle
   - c. Brace
   - d. Catch
   - e. Covering
3. Front Plate
   - a. Removal
   - b. Adjustment
   - c. Pinion Replacement

1. Front Door (#777).

a. The front door (#777) is secured by three #0 x ¼" oval head wood screws (#152B0-4). To replace, center the door in the panel and assemble the screws. Use #365 wood lock or Casco glue on screws to be assured of maximum screw holding power. It may be necessary to adjust the door catch by forming spring tension on lower lip.

b. The panel spring (#8) is replaced by removing hinge rod (#30172-P20). Position the new spring with ends to the inside. With a pliers, draw one of the ends to place tension on the spring. The coil spring tension must be enough to lift the panel rapidly.

c. The covering (#646) is secured to the metal panel by cement and four rivets (#7329). Use hot animal glue or 3M-EC-880 cement for the leather covering.



2. Top Door (#2409).

a. To remove the top door, it will be necessary to disconnect the right and left brace from the body--then, either remove the hinge rod (#30172-P21) or peel the leather from the back and remove the hinge screws.

The serial number is stamped on the inside front edge of the top door. If this part is replaced, the customer should be notified of the new number and he, in turn, should report both the old and new number to his insurance company, as well as GRAFLEX for correct camera registration.

b. Handle (#14233) may be replaced more conveniently, if the top door is removed. Drill out the old rivet and replace defective parts. Reassemble rivet (#16599) or .065" diameter escutcheon pin, cut to length allowing about 1/16" above the washer for riveting.

c. The top door brace (Right #2423, Left #2424) is assembled with the body anchor plate to the outside. Use special rivet (#288)--the brace must not bind after riveting, but it must move freely.

Locate the anchor plate screws of the top door brace in the original body holes. If a new top door or brace causes trouble by hitting the top or camera body, it will be necessary to slide the anchor plate back or forward respectively.

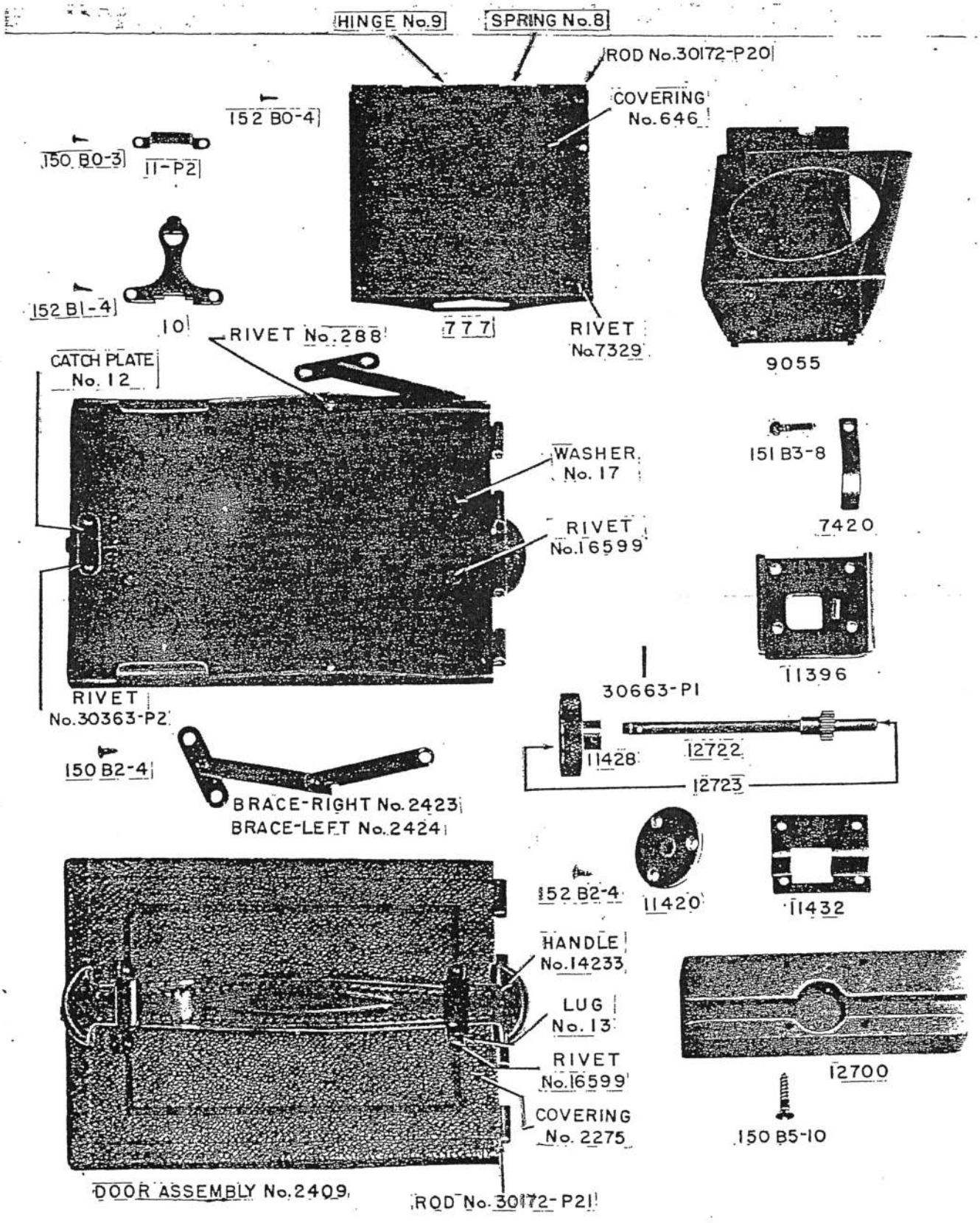
d. The catch plate (#12) will require that the leather be lifted along the front edge for riveting. File the rivets flush on top before re-cementing leather.

Re-form the top door catch (#10), so that the tension will be against the body.

e. The top door covering (#2275) must be skived (sanded thin) at the edge for easy and smooth cementing.

The leather may be scored with a hot iron 1/8" wide on a line 5/8" from the edge. Then score 1/16" wide on a line 1/4" from the edge.

Reassemble handle and lugs--see paragraph b.



FRONT PLATE COMPLETE No.13659

2¼ x 3¼ R. B. Series B GRAFLEX

TOP DOOR, FRONT

		QTY.	Unit Cost List
10	CATCH - TOP DOOR (use screw #152B1-4)	1	.15
11-P2	Strap - Top catch (use screw #150B0-3)	1	.10
150B1-4	Screw-hinge to body (¼" #1 FH S-8)	5	.01
150B2-4	Screw - top door brace to body (¼" #2 FH L17)	4	.03
150B5-10	Screw - Front plate to body (5/8" #5 FH S8)	4	.04
151B0-3	Screw - Top door strap to body (3/16" #0 RH L17)	2	.02
152B0-4	Screw - Front door to body (¼" #0 OH L17)	3	.01
152B1-4	Screw - Top door catch to body (¼" #1 OH L17)	2	.03
152B2-4	Screw - Focusing rod bearing to body (¼" #2 OH L17)	3	.01
228	Hinge - Body section of top door	1	.30
717	FRONT DOOR ASSEMBLY	1	.90
6	Door - front	1	.40
8	Spring - front door	2	.08
9	Hinge - front door	1	.10
646	Covering - front door (Morocco Leather)	1	.35
7329	Rivet - covering to front door	4	.01
30172-P20	Rod - front door hinge	1	.10
2409	DOOR ASSEMBLY - TOP	1	4.00
12	Catch plate (Use rivet #16599)	1	.10
13	Lug - carrying handle	2	.10
17	Washer - handle lug	4	.01
288	Rivet - brace to top door	2	.02
2275	Covering - top door (Morocco Leather)	1	.75
2423	Brace assembly - top door, right	1	.65
2424	Brace assembly - top door, left	1	.65
14233	Handle - camera carrying	1	1.35
16599	Rivet - handle lug (.065 diam.)	4	.01
30363-P2	Rivet - catch plate to top door	2	.01
11420	BEARING - FOCUSING ROD (Use screw #152B-4)	1	.50
12696	COVERING - FRONT (Morocco Leather)	1	.65
13659	FRONT PLATE COMPLETE	1	5.50
151B3-8	Screw - bearing plate (⅛" #3 RH L8)	4	.05
7402	Spring - yoke tension	2	.10
9055	Front plate assembly	1	2.50
11396	Yoke guide	1	.40
11422	Bearing plate - focusing rod	1	.20
12700	Bolster block	1	.30
12723	Focusing rod complete	1	1.00
11428	Knob - focusing	1	.35
12722	Focusing rod - complete with pinion	1	.50
30663-P1	Pin - focusing knob	1	.01
13663	Catch Pin - door	1	.01
30172-P21	Rod - top door hinge	1	.10

Order by part number and complete name. State quantity.
Prices are subject to change without notice.

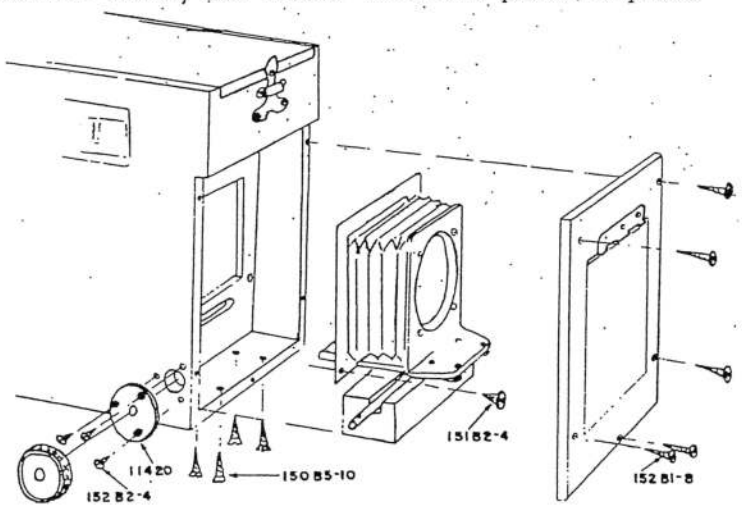
2¼ x 3¼ R. B. Series B GRAFLEX
Front Door, Top Door, Front Plate

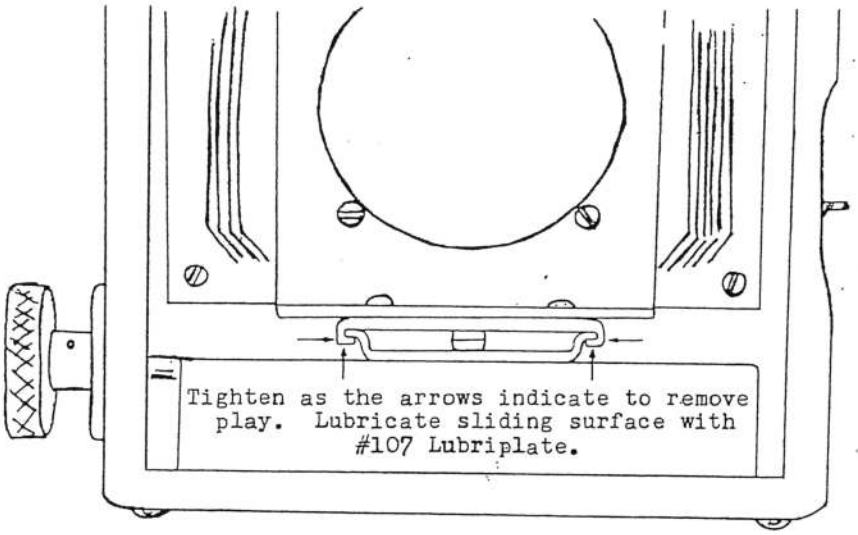
3. Front Plate (#13659).

a. To remove the front plate, it will first be necessary to remove the focusing knob (#11428), the focusing rod bearing (#11420), the front panel of the camera and last, the front bellows frame screw must be removed. Then remove 5/8" #5 flat head wood screws from the camera bottom to free the bolster block, and remove the front plate complete (#13659).

b. Adjust the front plate assembly (#9055), and the yoke guide (#11396) to remove play. Check tension of yoke tension springs (#7402). Adequate tension will prevent slip at long bellows draw. Tension set too high will require increased effort and dissatisfied operation at normal bellows extension.

c. Pinion replacement (#12722). See paragraph 3 a. --there is no short cut.





2¼ x 3¼ R. B. Series B GRAFLEX
Body Parts

Special Precautions for:

1. Bellows
2. Ground Glass and Ektalite Field Lens
3. Hood
4. Idler Frame
5. Mirror Frame
6. Release

1. Bellows (#7752).

a. Remove the front panel. Remove four #2-56 x ¼" oval head screws (104B2-4). At the bottom of the rear bellows frame, remove two #2 x ¼" round head screws (#151B2-4). At the top partition plate, loosen the three round head screws and slide the bellows down and out.

b. Inspect the front and rear bellows frame for flatness. Straighten if necessary.

c. Replace the back frame by sliding the top beneath the partition plate. Reassemble the bottom screw and then tighten the partition plate screws. Assemble the lens and flange temporarily--mark position of diaphragm index on flange. Reassemble the front frame and position the threaded flange, so that the lens diaphragm index will be near the top right.

2. Ground Glass Screen Assembly (#13017) and Field Lens (#31881-P3).

a. Assemble the serrations of the Ektalite field lens (#31881-P3) to the ground surface of the ground glass (#13017) and bind the two opposed 3-1/16" long edges together with paper tape (#11504).

(1) Position the assembly with tape to the outside edges and the polished side of the ground glass to the top.

(2) Bend the frame ears inward enough to hold the assembly. Do not attempt to bend the ears down--it will crack the glass.

b. Form the mounting tabs outward to increase the sliding friction when focusing. Reassemble two #1 x 1/4" long round head screws (#151B1-4) at the back, and two special machine screws (#118) at the front.

c. Focus as follows:

(1) Set lens wide open. Set camera film plane parallel and about 6 feet from a 4 foot square target. Use pie charts or similar, or old calendar sheets having large and small figures.

(2) Using a GRAFLEX focusing panel, focus on film plane. Lower mirror and adjust top ground glass--check each corner and center.

(3) Check infinity focus using procedure of step (2). Tighten screws when general focus is satisfactory.

3. Hood Assembly (#12718).

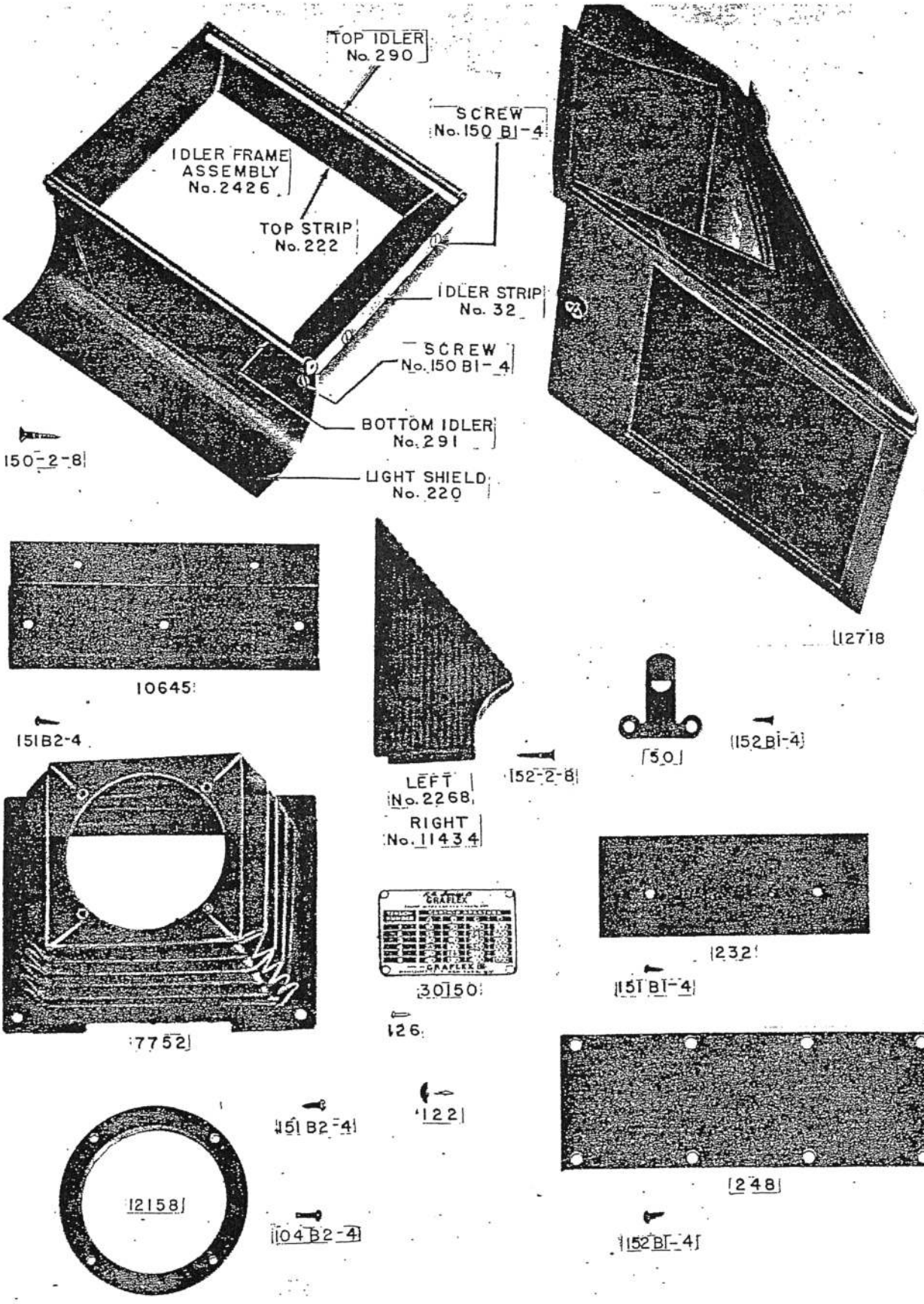
If the hood sags inward and does not open fully at the top, an adjustment can be made by lowering hood catch (#50). Plug old screw holes and relocate.

4. Idler Frame Assembly (#2426).

The idler frame assembly is secured by four #2 x 1/2" flat head wood screws (#150-2-8)--two on each side.

Remove the back.

Mark side index of case and frame to assure correct realignment.
Lift frame and swing out at the top to avoid damage to the lower curved metal shield.
The lower idler should turn free--lubricate very lightly with graphite grease.
The top idler should be staked to prevent turning and produce a quieter shutter.
Form metal shield, so that it will not bind against the tension roller and curtain.
Replace squarely, and be sure each corner is pressed down tightly. If frame is not square or one side is high, the curtain might ride off to one side.


TOP IDLER
No. 290
SCREW
No. 150 BI-4
IDLER FRAME
ASSEMBLY
No. 2426
TOP STRIP
No. 222
IDLER STRIP
No. 32
SCREW
No. 150 BI-4
BOTTOM IDLER
No. 291
LIGHT SHIELD
No. 220
150-2-8
12718
10645
151B2-4
LEFT
No. 2268
RIGHT
No. 11434
152-2-8
50
152BI-4
7752
30150
126
232
151 BI-4
122
151 B2-4
12158
104 B2-4
248
152 BI-4

2¼ x 3¼ R. B. Series B GRAFLEX
BODY PARTS

			Qty.	Unit Cost List
50	Catch - hood	(Use screw #152B1-4)	1	.20
104B2-4	Screw - lens flange to front plate	(¼" #2-56 OH L17)	4	.03
122	Foot, Camera - forward		2	.07
126	Pin - Name plate to body		4	.01
150-2-8	Screw - Inside angle block	(½" #2 FH S8)	4	.03
150B2-4	Screw - tripod nut to case	(¼" #2 FH S8)	3	.03
151B2-4	Screw - rear bellows frame to body	(¼" #2 RH S8)	2	.02
151B2-4	Screw - inside partition plate	(¼" #2 RH S8)	3	.02
152B1-4	Screw - bottom plate to body	(¼" #1 OH L17)	8	.03
232	Plate - mirror frame, bottom	(Use screw #151B1-4)	2	.15
248	Plate - bottom, rear	(Use screw #152B1-4)	1	.45
2268	Block - left inside angle	(Use screw #150-2-8)	1	.20
2276	Covering - Camera body	(Morocco leather)	1	2.85
2277	Covering - back strip	(Morocco leather)	1	.25
2278	Covering - front strip	(Morocco leather)	1	.35
2426	IDLER FRAME ASSEMBLY	(Use screw #150-2-8)	1	2.65
32	Idler strip		2	.10
150B1-4	Screw - idler strip to block	(¼" #1 FH S8)	4	.01
150B1-6	Screw - tension roller shield	(3/8" #1 FH S8)	6	.01
220	Light shield - curved for tension roller		1	.25
222	Top strip - inside idler frame		1	.15
290	Idler - bottom		1	.25
291	Idler - top		1	.25
7752	Bellows assembly		1	4.25
10645	Plate - inside partition	(Use screw #151B2-4)	1	.20
11434	Block - right inside angle	(Use screw #150-2-8)	1	.20
12158	Flange - lens		1	1.00
12696	Covering - front panel	(Morocco leather)	1	.65
12718	Hood assembly		1	6.75
16004	Tripod nut - bottom	(Use screw #150B2-4)	3	.15
30150	Name and speed indicator plate		1	.15

Order by part number and complete name. State quantity.
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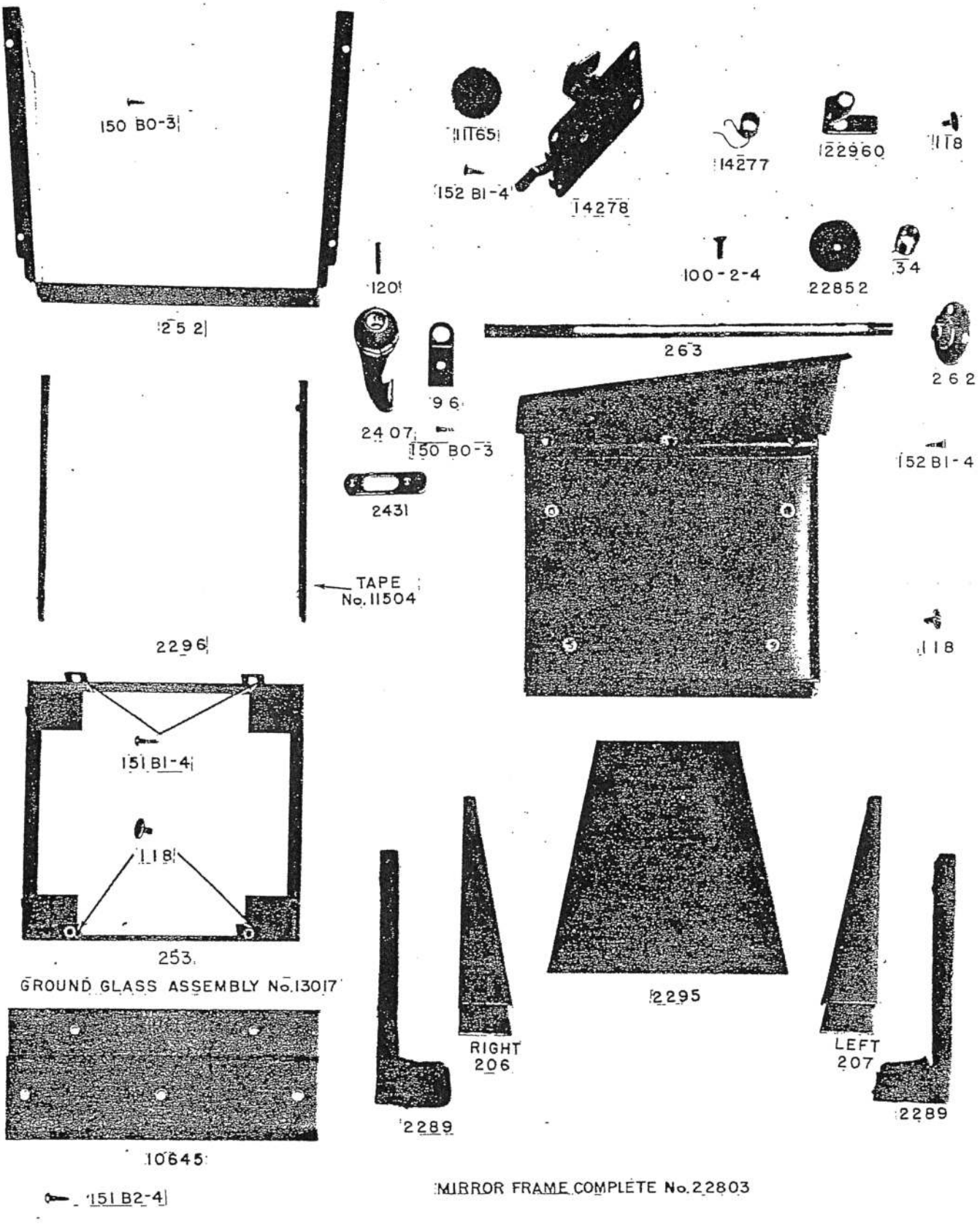

150 B0-3
252
11165
152 B1-4
14278
14277
22960
118
100-2-4
22852
34
120
263
262
96
2407
150 B0-3
152 B1-4
2431
TAPE
No. 11504
2296
118
151 B1-4
118
253
GROUND GLASS ASSEMBLY No. 13017
2295
RIGHT
206
LEFT
207
2289
2289
10645
151 B2-4
MIRROR FRAME COMPLETE No. 22803

GROUND GLASS, RELEASE, MIRROR FRAME

			Qty.	Unit Cost List
13017		GROUND GLASS SCREEN ASSEMBLY	1	1.50
	253	Frame - ground glass screen (Use screws #113 & #151B1-4)	1	.50
	2296	Glass - ground screen (Order 2 of #11504)	1	1.00
	11504	Tape - screen edge	2	.01
31881-P3		Field Lens - Ektalite	1	9.00
14278		RELEASE LEVER - MIRROR FRAME (Use screw #152B1-4)	1	1.75
	118	Screw - arm to release lever plate	1	.05
	14277	Spring - release arm	1	.10
	22960	Arm - mirror release	1	.45
22803		MIRROR FRAME COMPLETE	1	3.75
	118	Screw - mirror clip to frame	4	.05
	120	Taper pin - lever to rod	1	.01
	206	Clip - right side of mirror	1	.20
	207	Clip - left side of mirror	1	.20
	2287	Covering - mirror frame, front (shutter cloth)	1	.15
	2288	Covering - mirror frame, back (shutter cloth)	1	.20
	2289	Cushion - felt for mirror (right or left side)	2	.15
	2295	Mirror - first surface	1	4.65
	2407	Lever - mirror set	1	.65
	2426	Mirror frame assembly (Order covering #2287 & #2288)	1	1.00
	100-2-4	Screw - mirror frame to rod	1	.01
	205	Mirror frame	1	.75
	263	Rod - mirror frame	1	.25
34		Spring - mirror frame lifting	1	.10
96		Plate - mirror frame bearing (Use screw #150B0-3)	1	.05
118		Screw - ground glass screen assembly to body	2	.05
150B0-3		Screw - mirror frame bearing plate to body (3/16" #0 FH L5)	1	.01
151B0-3		Screw - inside frame to body (3/16" #0 RH L5)	4	.01
151B1-4		Screw - ground glass screen assembly (¼" #1 RH S8)	2	.01
151B1-4		Screw - mirror frame plate to body (¼" #1 RH S8)	2	.01
151B2-4		Screw - inside partition plate to body (¼" #2 RH S8)	3	.02
152B1-4		Screw - release lever to body (¼" #1 OH L17)	4	.03
152B1-4		Screw - bushing container to body (¼" #1 OH L17)	3	.03
232		Plate - mirror frame, bottom (Use screw #151B1-4)	1	.15
252		Inside frame (Use screw #150B0-3)	1	.65
262		Bushing container - for rod and spring (Use screw #152B1-4)	1	.30
2431		I & T slide assembly	1	.25
10645		Plate - inside partition (Use screw #151B2-4)	1	.20
11165		Light break for release (Mohair)	1	.04
22852		Light break - mirror frame rod	1	.05

Order by part number and complete name. State quantity.
Prices are subject to change without notice.

2¼ x 3¼ R. B. Series B GRAFLEX
Body Parts

5. Mirror Frame (#22803).

a. Mirror (#2295) replacement
b. Frame spring (#34) replacement
c. Frame complete (#22803) replacement

a. Mirror (#2295) replacement.

(1) It will be convenient to remove the hood and ground glass frame. See paragraph 2 and 3. Set focal plane curtain open. Loosen mirror clip screws (#118) of one clip. Remove two mirror clip screws from other clip; remove this clip, and then remove the mirror.

(2) Patch the mirror frame covering, if torn when removing a cemented mirror.

(3) Insert the new mirror with first-surface up. Replace mirror frame clip; tighten screws. Reassemble ground glass and refocus--see paragraph 2 c. aforementioned.

b. Frame spring (#34) replacement.

Apply spring tension by turning mirror frame spring container (#262) clockwise. Enough tension should be applied to lift the mirror, but it must not be too much and cause camera movement.

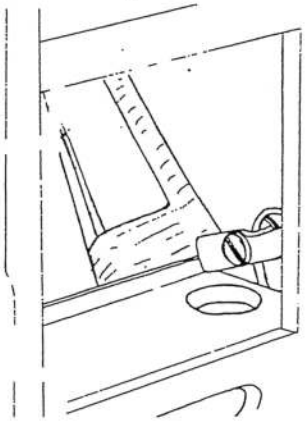
c. Frame complete (#22803) replacement.

Disassembly.
(1) Remove hood and ground glass. Remove mirror set lever (#2407) that is secured by a taper pin (#120). Remove mirror frame spring container (#262) and spring (#34). From frame and rod, remove three #2-56 x ¼" flat head screws (#100-2-4).

(2) The back covering (#2286) of the mirror frame is cemented to the light shield (#220) of the idler frame assembly. Remove carefully--do not tear.

Reassembly.
(3) Clean old cement from the apron of the mirror frame back covering. Reassemble frame, rod (#263), screws (#100-2-4), mirror set lever (#2407), light break (#22852), spring (#34), and spring container (#262). Cement the apron with EC-880 cement or rubber cement.

(4) Replace ground glass and focus--see paragraph 2 c.



6. Release Lever (#14278).

a. The release lever is secured with four #0 x ¼" oval head screws (#152B1-4). Check the mohair light break (#11165)--dust or replace if matted. The mirror release arm must be positioned in relation to the mirror as sketched.

Since the mirror depression may be changed when the release lever is replaced, it is necessary to check focus--see paragraph 2 c.

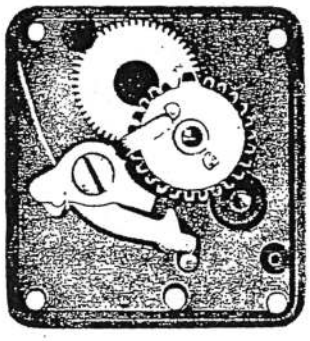
2¼ x 3¼ R. B. Series B GRAFLEX
Focal Plane Shutter

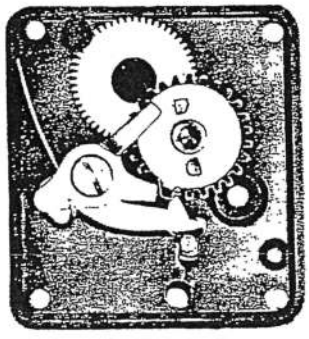
Special Precautions for:

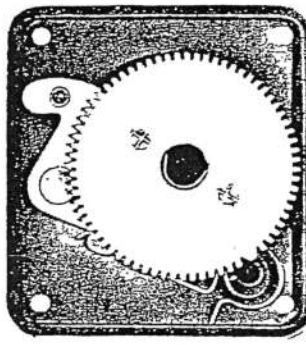
1. Disassembly
   - a. Shutter setting plate
   - b. Tension setting plate
   - c. Curtain and Rollers
2. Clean and Lubricate
3. Reassemble, Adjust, Time

1. Disassembly.

a. Shutter setting plate (#12724) is secured by four #3 x ½" oval head screws (#152B3-8).
NOTE: Screw in forward top plate hole is cut off to 3/8" long.
Remove the mirror lever assembly. The illustration does not show the outside face--see the parts layout on Page 2.

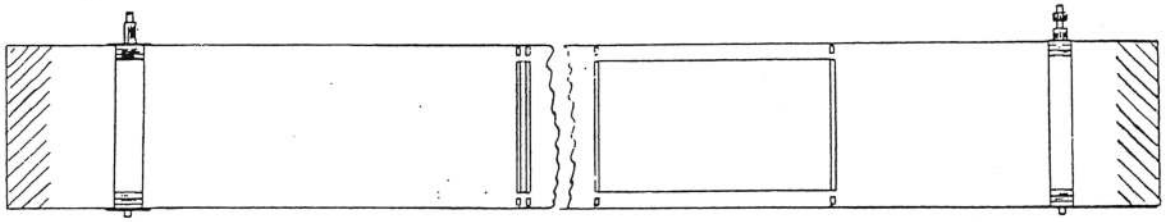






b. Tension setting plate (#14231) is secured by four #3 x ½" oval head screws (#152B3-8).
To replace the tension pawl spring (#14227), it may be necessary to remove the riveted tension winding knob (#14228). In this case, supply new knob.

c. Remove revolving back, see Section 20D. The curtain assembly (#2421) is cemented to the rollers with 3M-EC-880 adhesive. Use coarse sandpaper to remove old cement and roughen brass tube for adhesive tooth.
The axis of the roller must be cemented squarely to the longitudinal dimension of the curtain. Failure to do this will cause the curtain to roll to one side and bind against the camera body. Remove rollers from the camera to be assured of the best alignment when recementing.



The gear roller assembly (#2418) must be removed after the idler assembly has been removed. Mark side index of case and frame to assure correct realignment. Lift frame and swing out at the top to avoid damage to the curved metal shield.
The tension roller assembly (#14251) must be removed through the bottom of the camera. Remove the bottom plate (#248) that is secured by eight #0 x ¼" oval head screws (#152B1-4).

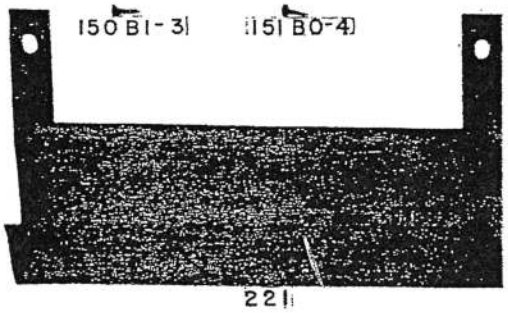
2. Cleaning and Lubrication.

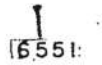
a. Clean all metal parts by immersing in cleaning solvent. Wash thoroughly to remove all dirt and foreign matter. All parts should be dry before reassembly.

b. Lubricate as follows;

Item	Location	Lubrication
Escapement Spring	Lubricate area that operates with master gear stop pins.	#107 Lubriplate
Gears	Lubricate meshing spur gears.	Graphite cup Grease #3
Bearings	Lubricate roller bearings at each end.	Graphite cup Grease #3
Springs	Dip springs for rust prevention and light lubrication.	Singer Sewing Machine Oil

CAUTION: Lubricate moderately. Do not allow any lubrication to contact the rubber of the shutter curtain.


150 B1-3
151 B0-4
221


6551

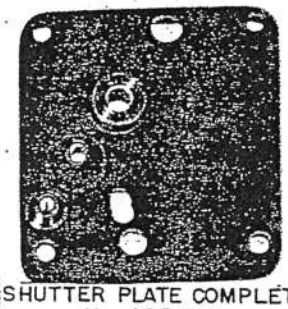
17077

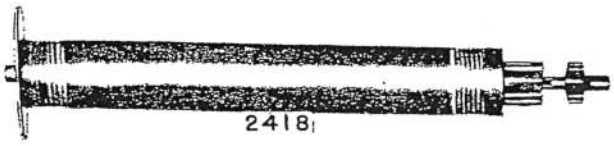
3015

30663-P2

3013

2416


SHUTTER PLATE COMPLETE
No. 12724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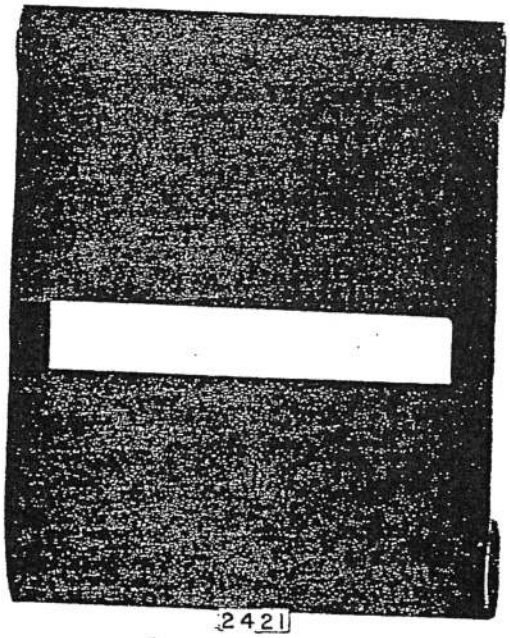
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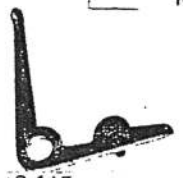

2415

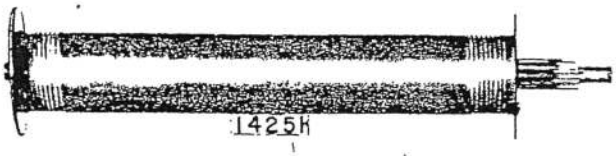
261

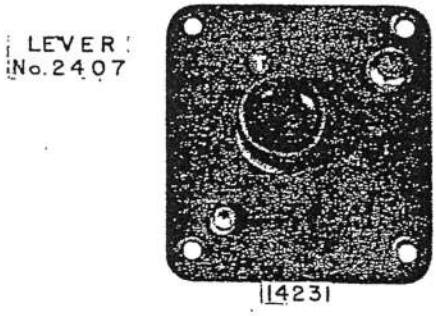
2417

118

281

SLIDE
No. 2431
152 B3-8


1425K


LEVER
No. 2407
14231

267

153

2¼ x 3¼ R. B. Series B GRAFLEX

FOCAL PLANE SHUTTER

			Qty.	Unit Cost List
2418	GEAR ROLLER ASSEMBLY		1	2.50
2421	CURTAIN ASSEMBLY		1	4.25
12724	SHUTTER PLATE COMPLETE		1	7.50
118	Screw - shutter plate release lever		1	.05
261	Spring - shutter escapement		1	.07
281	Screw - shutter escapement		1	.05
2413	Shutter plate		1	
2415	Lever - shutter release		1	.50
2416	Master gear assembly		1	1.75
2417	Escapement assembly		1	1.00
3013	Winding key		1	.65
30151	Gear - aperture indicator		1	.65
30663-P2	Pin - winding key & focusing knob		1	.01
14231	TENSION PLATE COMPLETE		1	4.25
148	Button - tension release pawl		1	.10
14227	Spring - tension pawl		1	.10
14228	Knob - tension winding		1	.45
14251	TENSION ROLLER ASSEMBLY		1	3.00
260	Spring - tension roller		1	.45
150B1-3	Screw - gear roller light shield	(3/16" #1 FH S8)	2	.01
151B0-4	Screw - gear roller light shield	(¼" #0 RH S8)	2	.01
152B3-8	Screw - tension plate to body	(½" #3 OH L17)	4	.01
152B3-8	Screw - shutter plate to body	(½" #3 OH L17)	4	.01
153	Nut - tension plate roller bushing		1	.15
221	Light shield - gear roller	(Use screw #150B1-3 & #151B0-4)	1	.35
267	Bearing - curtain roller		2	.35
2407	Lever - mirror set		1	.65
2431	I & T slide assembly		1	.25
6551	Tack - curtain guard to body		1	.01
17077	Guard - curtain		1	.10

Order by part number and complete name. State quantity.
Prices are subject to change without notice.

3. Reassemble, Adjust, Time.

a. The axis of the roller must be cemented squarely to the longitudinal dimension of the curtain. Failure to do this will cause the curtain to roll to one side and bind against the camera body. Remove rollers from the camera to be assured of the best alignment when recementing.

Lubricate curtain roller bearings and replace assembly.

b. Replace the idler assembly--form shield so that it does not bind against tension roller. Align the assembly square with the camera body.

c. Lubricate the shutter plate--see paragraph 2 b. Position the stop pins as shown in paragraph 1 a., indicator gear must be centered on "0".

d. Align the open slit of the curtain so that its top strut is over the top idler. Position the shutter plate.

e. Position the tension plate set at "1". Wind the tension knob a few times. Operate the shutter to remove curtain slack. Check interference at the idler shield.

f. Setting tension: Hold slotted tension shaft with screwdriver through hole in tension plate. Release tension slowly until all tension is released. With dial set at "1", position tension plate and wind to "6". Hold tension with screwdriver; lift plate and turn knob to "1"; lower plate and assemble screws.

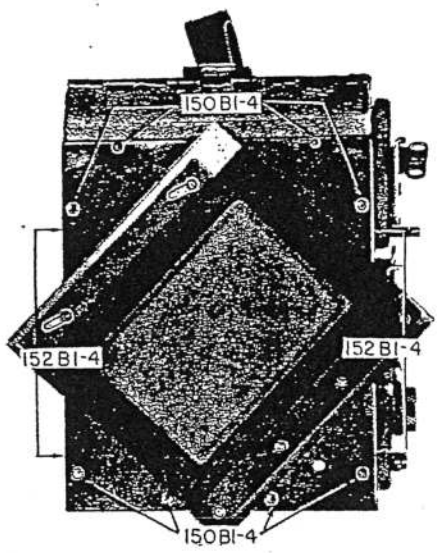
g. Setting curtain: The top strut of open aperture must not drop below the top idler. Raise or lower one tooth of the gear roller; or, finer adjustment may be made by adding or removing curtain material at the gear roller to change the diameter. Check curtain struts at all apertures--watch for bounce at bottom. Correct bounce by checking latch of shutter plate escapement and master gear stop pins; or, it may be necessary to lower the strut by changing gear roller mesh.

Cement curtain additional by dropping past "0" to latch. Draw a pencil line down the center of the roller. This line will show inside, apply 3M-EC-880 adhesive above this line. Repeat at the bottom.

2¼ x 3¼ R. B. Series B GRAFLEX
Revolving Back

Special Precautions for:

1. Attaching Back to Camera
2. Sliding Lock or Retainer Strip
3. Velvet
4. Wood Spacer Strip
5. Revolving Back Ring
6. Revolving Back Latch



1. Attaching Back to Camera.

The revolving back (#2425) is attached to the Camera body with eight #1 x ¼" flat head wood screws from the back and three #1 x ¼" oval head wood screws from the side.

2. Sliding Lock (#27) or Retaining Strip (#273).

a. The sliding lock (#27) is secured to wood spacer strip (#2269) by two round head wood screws (#151B2-4).

b. The retaining strip (#273) is secured by four #1 x ¼" oval head wood screws (#152B1-4) to wood spacer strip (#2269).

3. Velvet - Revolving Frame (#2758).

a. Remove the wood spacer strips (#2269). See paragraph below.

b. Remove old velvet and cement. Use 3M-EC-880 for the new velvet.

CAUTION: Do not saturate the velvet with the adhesive....it will destroy the plush texture. Trim loose threads around the opening.

4. Wood Spacer Strip (#2269).

a. The wood spacer strip is secured from the outside edge by two #1 x ¼" oval head wood screws (#152B1-4) and from the back by two #1 x 3/16" flat head wood screws (#150B1-3).... revolve the frame as illustrated for access to the back screws.

b. If the wood spacer is replaced, it will be necessary to perforate new holes for the screws. Reassemble the back screws first.

5. Revolving Back Ring (#258).

a. The revolving back ring (#258) is secured by eight special flat machine screws. Remove wood spacer strips and velvet from revolving frame for access to screw heads.

b. Lubricate the bearing surface very lightly with #107 Lubriplate or Parawax.

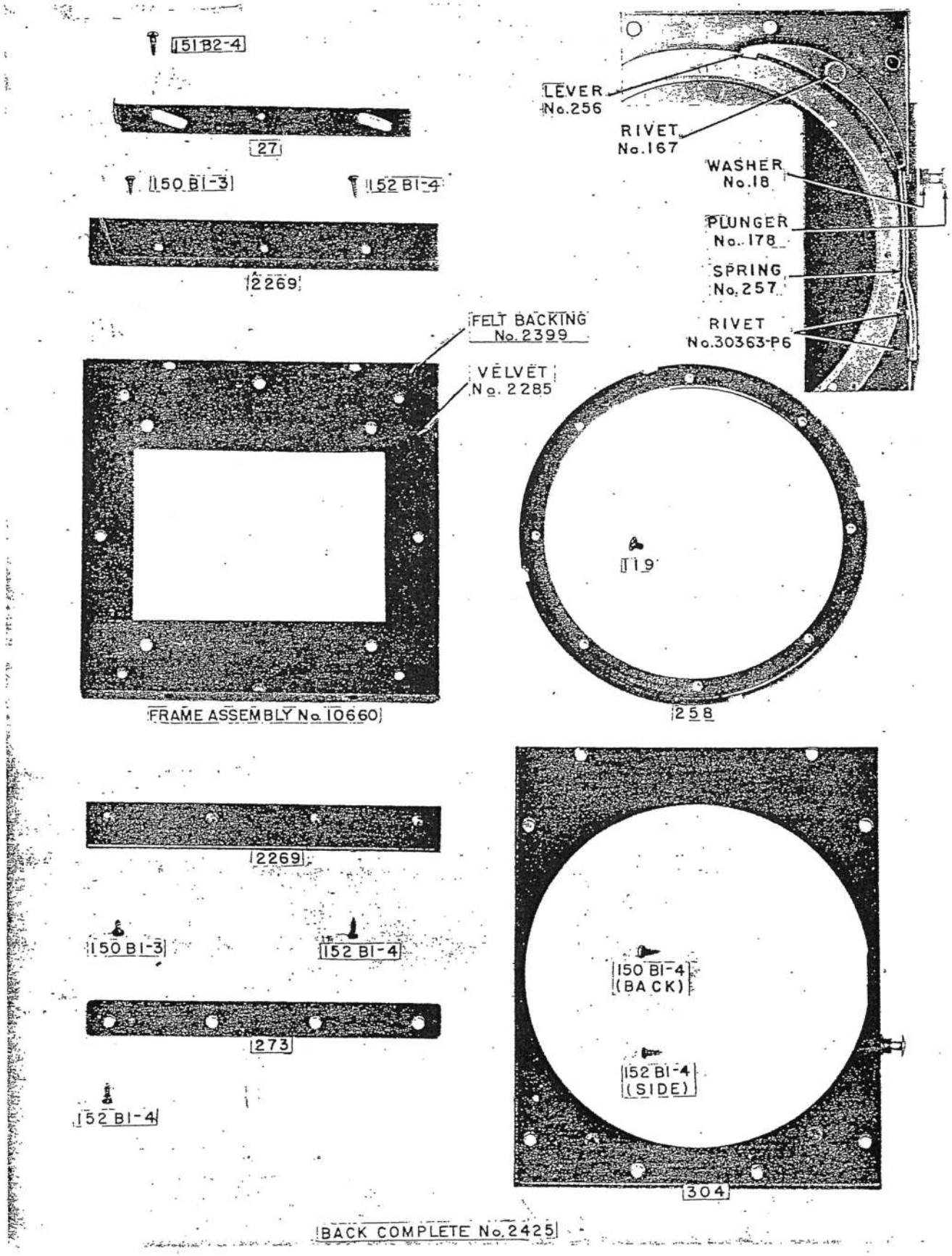
c. Reassemble ring screws....tighten to equal tension. Check revolving operation. See paragraphs 3 and 4 above for velvet and spacer strip replacement.

6. Revolving Back Latch.

a. The revolving back latch assembly is illustrated on Page 2 of this section. All parts are riveted to the mounting frame assembly (#304).

b. The latch lever (#256) should be flat and have the inside surface lubricated very lightly with #107 Lubriplate or Parawax. If necessary, file latch stop to fit ring notch.

c. Notice required rivets mentioned in parts listing when ordering replacements.


151 B2-4
27
150 B1-3
152 B1-4
2269
FELT BACKING No. 2399
VELVET No. 2285
FRAME ASSEMBLY No. 10660
LEVER No. 256
RIVET No. 167
WASHER No. 18
PLUNGER No. 178
SPRING No. 257
RIVET No. 30363-P6
19
258
2269
150 B1-3
152 B1-4
273
152 B1-4
150 B1-4 (BACK)
152 B1-4 (SIDE)
304
BACK COMPLETE No. 2425

REVOLVING BACK

			Qty.	Unit Cost List
2425	REVOLVING BACK COMPLETE	(Order attaching screws)	1	9.85
27	Lock - sliding	(Use screw #151B2-4)	1	.30
119	Screw - ring to revolving frame		8	.01
150B1-3	Screw - wood strip to revolving frame	(3/16" #1 FH S8)	4	.01
151B2-4	Screw - slide lock to wood strip	(¼" #1 OH L17)	2	.02
152B1-4	Screw - wood strip to revolving frame	(¼" #1 OH L17)	4	.03
152B1-4	Screw - retaining strip to wood strip	(¼" #1 OH L17)	4	.03
166	Pin - slide lock centering		1	.01
258	Ring - revolving back		1	1.00
273	Strip - plate holder retaining	(Use screw #152B1-4)	4	.35
304	Frame assembly - mounting		1	3.00
18	Washer - release plunger		1	.01
167	Rivet - latch lever		2	.03
178	Plunger - release		1	.10
256	Lever - latch		1	.20
257	Spring - latch lever		2	.10
30363-P6	Rivet - latch lever spring		2	.01
2258	Velvet - revolving frame		1	.25
2269	Strip - wood spacer, revolving frame	(Use screws #150B1-3 & #152B1-4)	2	.25
10660	Frame assembly - revolving		1	2.10
259	Frame - revolving		1	1.95
2399	Felt - revolving frame		1	.25
	Attaching screws - revolving back to body			
150B1-4	Screw - revolving back to body	(¼" #1 FH L17)	8	.01
152B1-4	Screw - revolving back to body	(¼" #1 OH L17)	3	.03

Order by part number and complete name. State quantity.
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2¼ x 3¼ R. B. Series B GRAFLEX
TOCK SCREWS

PART NUMBER	FINISH	USE	REQUIRED Per Assem	REQUIRED Total	SIZE	NET PER 25
		STANDARD SCREWS				
100-2-4	S-8	Mirror frame to rod		3	¼" #2-56FH	.20
104B2-4	L-17	Lens flange to front plate		4	¼" #2-56OH	.20
150B0-3	L-17	Mirror frame bearing plate to body		1	3/16" #0 FH	.20
150B1-3	L-17	Wood spacer strip to revolving frame	(4)	7	3/16" #1 FH	.20
		Gear roller light shield	(3)			
150B1-4	L-8	Top door hinge to body		5	¼" #1 FH	.20
150B1-4	L-17	Back to body		8	¼" #1 FH	.20
150B1-4	S-8	Idler frame strip to block		4	¼" #1 FH	.20
150B1-6	S-8	Idler frame shields to frame		6	3/8" #1 FH	.20
150B2-4	L-17	Top door brace to body		4	¼" #2 FH	.25
150-2-8	S-8	Inside angle block to body Idler frame to body	(4) (4)	8	½" #2 FH	.25
150B5-10	S-8	Front plate complete to body		4	5/8" #5 FH	.40
151B0-3	L-5	Inside frame to body Top door catch strap to body	(4) (2)	6	3/16" #0 RH	.20
151B0-4	S-8	Gear roller light shield to body		2	¼" #0 RH	.20
151B1-4	S-8	Mirror frame plate to body Ground glass frame to body, rear holes	(2) (2)	4	¼" #1 RH	.20
151B2-4	L-17	Slide lock to wood spacer strip Light break to body Inside partition plate to body	(2) (2) (3)	7	¼" #2 RH	.25
151B2-4	S-8	Bellows to body, rear frame, lower holes				
151B3-8	L-8	Focusing rod bearing plate to block		4	½" #3 RH	.30
152B0-4	L-17	Front door hinge to body		3	¼" #0 OH	.20
152B1-4	L-17	Spacer strips to revolving frame, top and bottom	(8)	30	¼" #1 OH	.20
		Mirror frame release to body	(4)			
		Back to body	(3)			
		Mirror frame spring container to body	(3)			
		Hood catch to body	(2)			
		Top door catch to body	(2)			
		Bottom plate to body	(8)			
152B1-8	L-17	Front Panel to body		5	½" #1 OH	.20
152B2-4	L-17	Focusing rod bearing to body		3	¼" #2 OH	.25
152B3-8	L-17	Tension plate to body Shutter plate to body	(4)	8	½" #3 OH	.30

Order by part number and complete name. State quantity.
Prices are subject to change without notice.

2¼ x 3¼ R. B. Series B GRAFLEX STOCK SCREWS

PART NUMBER	FINISH	USE	REQUIRED Per Assem	REQUIRED Total	SIZE	NET PER 25
		SPECIAL SCREWS				
118		Ground glass frame to body - front Mirror lever release arm to plate Mirror clip to mirror frame Shutter release lever to plate	(2) (1) (4) (1)	8		.40
119		Ring to revolving frame		8		.25
281		Shutter escapement to plate		1		.80

FINISH CODE

L-5	Flat Black
L-8	Black
L-17	Glossy Black
S-8	Chemical Black

LUBRICATION AND CEMENTS

Lubrication & Cement	Substitute	Use
Graphite Cup Grease No. 3 (1 lb. Can) by Joseph Dixon Co. Division 45-C Jersey City, N.J.	Standard SG 4455 (AN-G-3A) by Standard Oil of Indiana 910 S. Michigan Ave. Chicago, Ill.	For heavier loaded bearings or sliding surfaces. 1. Curtain roller case bearings and shutter plate bearings. 2. Master gear shaft bearing.
#107 Lubriplate (1 lb. Can) by Fiske Bros. Refining Co. Newark, N.J.	Parawax (*Substitute Graphite Cup Grease No. 3 for escapement brake spring)	For sliding surface. 1. Revolving back. *2. Escapement brake spring.
Singer Sewing Machine Oil (3 oz. Bottle) by Singer Sewing Machine Co. New York, N.Y.	Typewriter Oil or Sperm Oil	For rust prevention and light lubrication. 1. Tension roller springs -- oil through the bearing rod hole.
3M-EC-880 Adhesive* by Minnesota Mining & Mfg. 4-11 Piquette Ave. Detroit, Mich.	Use rubber cement, but only as emergency.	For metal, neoprene, synthetic rubber and most neutral materials. 1. Shutter curtain to roller. 2. Light shields to camera body, shutter plate, and shutter cover.

* Use toluol thinner and solvent for this cement.

Order by part number and complete name. State quantity.
Prices are subject to change without notice.

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